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Claims

1. A conduit gripping apparatus for a vehicle travelling along a conduit having fluid flowing therein, the apparatus comprising:-

a body; and

a plurality of surface engaging elements, wherein each said surface engaging element is adapted to engage a surface of the conduit and resist relative movement of the element and the surface of the conduit in a first direction along the conduit more than in a second direction opposite to said first direction;

wherein each said surface engaging element is adapted to execute reciprocating movement, relative to the body, having a component substantially parallel to said first and second directions, and not all of said surface engaging elements execute said reciprocating movement in phase with each other, and wherein said surface engaging elements remain in contact with the surface of the conduit during said reciprocating movement.

2. An apparatus according to claim 1, wherein a plurality of said surface engaging elements are provided with a plurality of resilient members.

3. An apparatus according to claim 2, wherein a plurality of said resilient members are bristles.

4. An apparatus according to claim 2 or 3, wherein a plurality of said resilient members are of elastomeric material.

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5. An apparatus according to any one of claims 2 to 4, wherein said resilient members extend, when in an unstressed state, substantially perpendicularly to the direction of movement of the vehicle.
6. An apparatus according to any one of the preceding claims, wherein a plurality of said surface engaging elements are adapted to execute said reciprocating movements in a direction substantially parallel to an axis of the body.
7. An apparatus according to claim 5, further comprising a shaft rotatably mounted to and engaging said surface engaging elements, such that rotation of the shaft relative to the body in use causes said reciprocating movement.
8. An apparatus according to claim 7, further comprising at least one engaging member provided on one of said shaft and a respective said surface engaging element, and at least one groove provided on the other of said shaft and said surface engaging element, wherein rotation of said shaft relative to said surface engaging elements causes movement of the or each said engaging member along the corresponding said groove to cause said reciprocating movement of the corresponding said surface engaging element.
9. An apparatus according to any one of the preceding claims, wherein a plurality of said surface engaging elements are retractable relative to the body.
10. An apparatus according to claim 9, further comprising cam means for retracting said retractable elements.
11. An apparatus according to any one of the preceding claims, wherein throughout the reciprocating motion, approximately half of said elements are moving in said first direction and

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approximately half in said second direction relative to the body.

12. An apparatus according to any one of the preceding claims, wherein at least one said surface engaging element executes said reciprocating movement along a substantially straight line.

13. A conduit gripping apparatus for a vehicle travelling along a conduit having fluid flowing therein, the apparatus substantially as hereinbefore described with reference to the accompanying drawings.

14. A vehicle for travelling in a conduit having fluid flowing therein, the vehicle comprising:-

at least one conduit gripping apparatus according to any one of the preceding claims;

drive means having a shaft adapted to be rotated relative to the or each said body as a result of flow of fluid relative thereto;

first surface engaging means mounted to the shaft for engaging a surface of the conduit and applying a gripping force thereto, such that said gripping force resists movement of the surface engaging means relative to the conduit more in one of said first or second direction than in the other of said first or second direction; and

connector means for causing said reciprocating movement of said surface engaging elements as a result of rotation of the shaft relative to the or each said body.

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15. A vehicle according to claim 14, wherein the vehicle derives the energy needed to propel itself from the fluid flow itself.

16. A vehicle according to claim 15, wherein the drive means includes at least one turbine.